

## CLAIMS

### What is claimed is:

1. A semiconductor device, comprising:  
a semiconductor substrate including an active device region;  
5 at least one conductive line disposed upon said active device region, said at least one  
conductive line being flanked by sidewall spacers;  
SUB C17 an undoped silicon dioxide cap disposed over and in contact with said at least one  
conductive line;  
a passivation layer over said undoped silicon dioxide cap; and  
10 at least one contact aperture defined through said passivation layer and including at least  
one sidewall extending substantially perpendicularly relative to said  
semiconductor substrate, at least a portion of said at least one sidewall terminating  
at said undoped silicon dioxide cap.

2. The semiconductor device of claim 1, wherein said at least one conductive  
line comprises a word line.

3. The semiconductor device of claim 1, wherein said passivation layer  
comprises doped silicon dioxide.

4. The semiconductor device of claim 1, wherein said passivation layer  
comprises borophosphosilicate glass, phosphosilicate glass, or borosilicate glass.

5. The semiconductor device of claim 1, wherein said undoped silicon  
25 dioxide cap is at least partially exposed through said at least one contact aperture.

6. A semiconductor device, comprising:  
a semiconductor substrate;

at least one undoped silicon oxide structure in contact with a conductive structure positioned over said semiconductor substrate; and  
at least one doped silicon oxide structure over said at least one undoped silicon oxide structure and having at least one sidewall substantially perpendicular to a plane of said semiconductor substrate, at least a portion of said at least one sidewall terminating at said at least one undoped silicon oxide structure.

7. The semiconductor device of claim 6, wherein said at least one sidewall comprises a sidewall of an aperture.

8. ~~The semiconductor device of claim 6, wherein said at least one sidewall at least partially defines an aperture through said doped silicon oxide structure.~~

9. ~~The semiconductor device of claim 6, wherein said at least one doped silicon oxide structure comprises borophosphosilicate glass, phosphosilicate glass, or borosilicate glass.~~

10. ~~The semiconductor device of claim 6, wherein said at least one undoped silicon oxide structure is located over said conductive structure.~~

11. ~~The semiconductor device of claim 10, wherein said at least one undoped silicon oxide structure comprises an insulative cap over a conductive line.~~

12. ~~The semiconductor device of claim 11, wherein said insulative cap is partially exposed through an aperture of said at least one doped silicon oxide structure defined by said at least one sidewall.~~

13. ~~The semiconductor device of claim 6, wherein said at least one undoped silicon oxide structure is exposed adjacent said at least one sidewall.~~